PART I - SECTION C
STATEMENT OF WORK
RCLR TOWER MAINTENANCE AND INSPECTIONS

SECTION 1 GENERAL

(a) GENERAL: All activities included in this Scope of Work are to be accomplished in compliance with the following standards: The current Telecommunications Industry Association / Electronic Industries Association Circular 222, (TIA / EIA - 222) and the current Federal Aviation Administration (FAA) / Federal Communications Commission Advisory Circular AC 70/746 (FAA / FCC).

(b) SCOPE: To provide tower and antenna inspection, maintenance and repair services, where appropriate for nine (9) FAA owned towers and antennas located in the Champaign System Support Center (CMI SSC) area. Subjects covered in this scope of work are listed below.

Section 2	Tower Inspections
Section 3	Antennas and Lines Inspection
Section 4	Emergency Inspections
Section 5	Post Construction Inspections
Section 6	Preventive Maintenance
Section 7	Demand Maintenance
Section 8	Reports
Section 9	Service Frequency
Section 10	RCL Tower Site List

(c) QUALIFICATIONS: The Contractor shall use only qualified, trained, and experienced personnel to perform the tasks identified in this Scope of Work.

(d) NOTIFICATION: The Contractor shall schedule all inspection and maintenance activities with the FAA CMI SSC Manager prior to any work being performed and shall report upon arrival, and when leaving the facility. FAA CMI SSC technical personnel shall accompany the Contractor at the FAA RCL tower site locations before any tower inspection or maintenance work will take place. Notification is particularly important if an activity has the potential for causing significant movement of the tower. Tower movement could result in a signal disruption and an out of service condition. Therefore, before guy wire tensioning or any other activity that could cause significant tower movement is performed, the contractor shall contact the FAA CMI SSC Manager for approval. The contractor shall request approval at least 48 hours in advance of the proposed work. If the request for approval is for guy wire tensioning the request for approval shall be in writing and shall include a detailed description of the guy wire tensioning procedure to be used.

(e) WORK TIME: The Contractor shall perform inspection and maintenance activities during daylight hours only, unless otherwise authorized by the FAA CMI SSC Manager. FAA CMI SSC personnel shall accompany the Contractor at the RCL tower site locations during the inspection and maintenance activities.

SECTION 2 TOWER INSPECTIONS

(a) The contractor shall provide material, and experienced personnel to perform tower inspections. (Refer to Section 10 for required Tower Inspection frequency)

(b) The towers are steel guyed towers.

(c) Inspection shall include, but not be limited to:

(1) Tower Foundation, including but not limited to:
- a. Movement or settlement
- b. Standing water or erosion
- c. Condition of concrete
- d. Brush and vegetation

(2) Tower Base, including but not limited to:
- a. Grouting
- b. Weep holes
- c. Anchor bolts, nuts, washers, and base plate
- d. Grounding (see item 10 "Grounding")

(3) Tower, including but not limited to:
- a. Structural members and bolts
- b. Welds
- c. Hand hole cover plates and hardware
- d. Connection bolt torque. Spot-check a minimum of 10% of the connection bolts. If a loose bolt is found in a structural connection then all bolts in that connection shall be checked

(4) Tower Guys including, but not limited to:
- a. Condition of wire cables
- b. Condition of hardware
- c. Grounding (see item 10 "Grounding")

(5) Guy Anchors, including but not limited to:
- a. Movement or settlement
- b. Standing, water or erosion
- c. Anchor head above grade
- d. Anchor head condition
- e. Anchor rod condition
- f. Corrosion control measures (galvanizing, coatings, concrete encasement, cathodic protection system, etc.)
- g. Grounding (see item 10 "Grounding")

(6) Climbing Facilities, including but not limited to:
- a. Ladders, step bolts
- b. Platforms, catwalks
- c. Safety climb device
- d. Cages
- e. Rails

(7) Tower Finish, including but not limited to:
- a. Condition of FAA required markings
- b. Condition of paint and/or galvanizing

(8) Tower Lighting, including but not limited to:
- a. System operation
- b. Light fixtures, conduit, and junction boxes
- c. Beacons, strobes, and obstruction light operation
- d. Light fixture lenses
- e. Safety chains and latches
- f. Gaskets
- g. Vent and drain holes
- h. Hardware
- i. Controllers
- j. Photo cells
- k. Alarms
- l. Bulbs
- m. Wiring

(9) Lightning Protection, including but not limited to:
- a. Condition of lightning rod
- b. Lightning rod location
- c. Grounding (see item 10 "Grounding")

(10) Grounding. The grounding system components and installation inspection shall include, but not be limited to:
- a. Cad welds
- b. Mechanical connections and hardware
- c. Ground leads
- d. Covers accessible
- e. Ground lead bending radius

(11) Tower Alignment. Inspect for signs of settlement or movement. Plumb and twist shall be checked per latest revision of TIAIEIA-222 standard.

(12) Guy Wire Tension:
- a. Tension shall be checked with a dynamometer per the "Direct Method" for measuring guy tension as described in the latest revision of TIA/EIA-222 and compared to the design requirements and FAA specifications.
- b. Temperature, wind speed, and wind direction shall be taken into consideration when performing guy wire tension testing.
- c. Do not test guy wire tension when wind exceeds 15 mph or when wires are covered with ice or snow.

(d) Digital photo documentation including, but not limited to:

(1) Overall tower showing all antennas

(2) Overall site

(3) Site plan view, from top of structure

(4) Overall guy anchor areas

(5) All faults. Minor faults, which are corrected at the time of the inspection, shall have before and after photographs.

SECTION 3 ANTENNAS AND LINES INSPECTION

(a) The contractor shall provide material, and experienced personnel to perform antenna and transmission line inspections. (Refer to Section 10 for required antenna and lines inspection frequency)

(b) Inspection shall include, but not be limited to:

(1) Antenna, including but not limited to:
- a. Movement or shifting
- b. Mounting hardware
- c. Down tilt bracket and hardware
- d. General condition
- e. Weather tight connections

(2) Transmission Lines, including but not limited to:
- a. Bending radius
- b. Supports
- c. General condition
- d. Hoisting grips
- e. Ground kits and jumpers
- f. Weather tight connections
- g. Grounding (see Section 2, item 10 "Grounding")

(3) Transmission Line Bridge, including but not limited to:
- a. Transmission line protection
- b. Anchor bolts, nuts, washers, and base plate
- c. Structural members and hardware
- d. Transmission line hangers
- e. General condition
- f. Minimum of two posts grounded (see Section 2, item 10 "Grounding")

(4) Transmission Line Cable Tray, including but not limited to:
- a. Transmission line protection
- b. Members and hardware
- c. General Condition
- d. Grounding (see Section 2, item 10 "Grounding")

(5) Transmission Line Equipment/Building Entry Port, including but not limited to:
- a. Port hole covers, plates, and hardware
- b. Transmission line port hole boots and hardware
- c. Grounding (see Section 2, item 10 "Grounding")

(6) Transmission Line Sweep Test. Sweep Tests shall be performed on all FAA antenna and lines. Trained personnel using Wiltron Site Master Test equipment or equivalent will conduct sweep tests.

(c) Digital photo documentation including, but not limited to:

(1) Overall tower showing all antennas

(2) Each antenna

(3) Overall transmission line bridge

(4) Overall transmission line building entry port

(5) All faults. Minor faults, which are corrected at the time of the inspection, shall have before and after photographs

SECTION 4 EMERGENCY INSPECTIONS

(a) At an extra, negotiated cost the contractor shall provide material and experienced personnel to perform Emergency Inspections.

(b) Emergency inspections may be requested by the FAA, and will be performed by the Contractor at times other than the normal frequencies specified in Section 10.

(c) Emergency inspections could be required as a result of, but not limited to:

(1) Light outage

(2) Severe wind and/or ice

(3) Storms

(4) Direct lightning strikes

(5) Earthquakes

(6) Any other extreme loading condition

(d) The Contractor shall be prepared to provide the FAA with 24 hours a day, 7 days a week emergency service.

(e) Emergency Inspections could include, but are not limited to, the inspection requirements specified in Sections 2 and 3.

SECTION 5 POST CONSTRUCTION INSPECTIONS

(a) The Contractor shall provide material and experienced personnel to perform Post Construction Inspections. (Refer to Section 10 for required Post Construction Inspection frequency)

(b) Post Construction Inspections are inspections performed at the completion of tower renovation projects and new tower construction.

(c) Post Construction Inspections shall include a thorough inspection to verify that construction and equipment installation is in compliance with TIA/EIA standards. Inspections shall include but not be limited to, inspection requirements specified in Sections 2 and 3

SECTION 6 PREVENTIVE MAINTENANCE

Preventive Maintenance shall be performed on FAA towers and attachments as required based on the conclusion of the inspection as specified in Sections 2 and 3.

(a) Preventive Maintenance includes minor repairs, improvements, and/or replacements for which labor and material costs shall be covered by the negotiated maintenance agreement fee.

(b) Preventive Maintenance is pre-authorized by FAA and shall be performed at the time of the tower inspection site visit.

(c) Preventive Maintenance work shall be documented, in the Tower Inspection Report, and in compliance with the requirements of Section 9 and shall include, but not be limited to:

(1) Tighten replace loose and/or missing anchor bolt nuts and/or washers

(2) Tighten replace loose and/or missing structure connection bolts, nuts, pal nuts, lock washers, and flat washers

(3) Tighten/replace loose and/or missing transmission line bridge connection bolts, nuts, and washers

(4) Tighten/replace loose and/or missing transmission line cable tray connection bolts, nuts, and washers

(5) Tighten/replace loose and/or missing antenna mounting hardware, nuts, bolts, and/or washers

(6) Re-attach/replace loose or missing transmission line support clips

(7) Re-attach/replace loose or missing ground lugs, mechanical connections, and/or Cad welds

(8) Re-tension guy wires

(9) Scrape and/or wire brush small areas of damaged galvanizing, where rust and/or corrosion is present, to the metal and paint with a zinc-rich cold galvanizing compound

(10) Tighten/re-attach/replace all other loose, detached, and/or missing items

(11) Replace all tower lighting bulbs. The FAA CMI SSC will furnish lighting lamps.

(d) Additional repairs requiring extra personnel, time and repair parts that can not be accomplished at the time of the maintenance and inspection will be classified as Demand Maintenance and shall comply with the requirements specified in Section 7.

SECTION 7 DEMAND MAINTENANCE

(a) Demand Maintenance includes major repairs, capital improvements, and/or replacements for which material and labor costs are not covered by the maintenance contract and must be scheduled or deferred until a future date. The maintenance Contractor will provide the FAA CMI SSC Manager with a bid price for any extra repair work that will require parts and extra time to complete.

(b) The FAA must approve all Demand Maintenance in writing prior to any work being performed.

(c) The Tower Inspection Contractor will not normally perform demand maintenance work. However, demand maintenance work that, in the best judgment of the Tower Inspection Contractor, is a threat to safety or the continued operation of the network, may be performed by the inspection contractor. In this situation the normal process of submitting an estimate will not be required in order to eliminate the unsafe situation or bring the equipment back into service as quickly as possible. The contractor will immediately notify the FAA and describe the unsafe or out of service condition that has been discovered. If FAA agrees that the repair should be accomplished immediately, the contractor will be given a verbal approval to proceed with the repair. As soon as repairs are completed the contractor shall submit a Tower Maintenance Report to the FAA CMI SSC Manager explaining the critical nature of the problem and describing the corrective action taken.

Good faith actions in accordance with the above will be compensated at the contracted rates agreed upon by both parties. Neglect of the proper authorization procedures without justification may, at the option of be sufficient reason for non-payment.

SECTION 8 REPORTS

(a) The Contractor's inspection crews shall be expected to produce the following required inspection report forms when required.

(1) Tower Inspection Report

(2) Record of Tower Alignment Check

(3) Record of Guy Wire Tensioning

(4) Antenna and Lines Inspection

(5) Tower Maintenance Report

(6) Tower and Attachment Inventory

Crew personnel shall enter report data gathered at the site at the time the service is provided. Report forms will be completed and provided to the FAA CMI SSC Manager within 14 days after the completion of the inspection and maintenance activities.

(b) Contractor shall deliver to FAA CMI SSC Manager within fourteen (14) calendar days of the completion of a tower inspection and maintenance activity, a detailed report for the covered facility. Reports shall include but not be limited to the following information:

(1) General Site Information:

a. Site name
b. Site location (address, city, state, etc.)
c. Tower type, height, and manufacturer
d. Inspection date
e. Weather conditions
f. Name of crew leader

(2) Summary of faults. All faults shall be categorized as one of the following:

a. Priority 0 - Satisfactory condition - No work required

b. Priority 1 - Emergency Repair - Faults requiring immediate attention. Failure to repair the fault may result in tower failure, disruption of service, or injury to equipment or personnel.

c. Priority 2 - Routine Work - Faults requiring ordinary maintenance service. Fault should be repaired during the regularly scheduled maintenance. If the fault is ignored it could, over time, have an adverse effect on the performance or structural stability of the item.

d. Priority 3 - Future Work -Faults requiring attention within the next 12 to 24 month. Fault is not service critical and presents no immediate danger to equipment or personnel. However if ignored it could, over time become an Emergency fault.

(3) Report Body:

a. Results of the Inspection shall be separated into groups as identified in Section 2, Section 3, and Section 4, including but not limited to:

(i) Checklist of each item inspected indicating whether the items passed, failed, was corrected, or non applicable

(ii) Comments including: fault description, minor faults corrected, major fault correction recommendations, time and material cost estimate to correct major faults, and photograph log numbered to correspond with photographs.

b. Tower, twist and sway data sheet including but not limited to:

(i) Description of method used to check tower plumb, twist, and sway
(ii) Temperature
(iii) Wind velocity and direction
(iv) Results from tests

c. Guy Wire Tension data sheet including but not limited to:
(i) Description of method used to check guy wire tension
(ii) Design tension
(iii) Temperature
(iv) Wind velocity and direction
(v) Results of tension test: guy number, cable size, vertical height, horizontal distance to anchor, required tension, initial tension, and adjusted tension

d. Site sketch showing:
   (i) Tower, equipment /building, and transmission line bridge relationship
   (ii) Tower and guy wire orientation
   (iii) Transmission line ladder location on the support structure
   (iv) Climbing ladder/peg location on the support structure
   (v) Antenna azimuths

e. Transmission Line Sweep Test results

f. Photographs. All photographs shall be electronic digital photographs, numbered and labeled to correspond to the photograph numbers and descriptions noted on the inspection report form.

(c) The Contractor shall deliver a detailed Maintenance Report to the FAA for each site at which maintenance activities were performed.

SECTION 9 SERVICE FREQUENCY

SERVICE	AD	OTHER/COMMENTS
Tower Inspection - NG		Every 4 years
Tower Inspection - G		Every 2 years
Tower Inspection - NGCE		Every 2 years
Tower Inspection - GCE		Every 1 year
Tower Inspection - LT		Every 1 year
Tower Alignment Check		At time of Inspection
Guy Wire Tension Check		At time of Inspection
Antenna and lines Inspection		At time of Inspection
Preventive Maintenance		At time of Inspection
Inspection Reports		At time of Inspection
Post Construction Inspection	X	
Emergency Inspection	X	
Tower & Attachment Inventory	X	
Demand Maintenance	X	
Demand Maintenance Reports		When Maintenance is Performed

AD - As Directed by FAA
NG - Not Guyed
NGCE - Not Guyed, Corrosive Environment
G - Guyed
GCE - Guyed, Corrosive Environment
LT - Lighted Tower

SECTION 10 RCL TOWER SITE LIST

Location (County)	Facility ID	Height (est.)	Longitude	Latitude
St. John (Perry)	AS8 (IGQ)	120	41 25.737	87 29.330
Monee (Will)	AT8 (C56)	210	41 24.782	87 45.967
Mazon (Grundy)	CB8 (DTG)	335	41 09.156	88 27.819
Chatsworth (Livingston)	CC8	335	40 45.613	88 22.115
Sibley (Ford)	CD8 (1C1)	304	40 30.913	88 20.276
Leroy (Boone)	CE8 (0C0)	304	40 24.576	88 46.033
Woodworth (Iroquois)	DF8	315	40 40.917	87 54.537
Aroma Park (Kankakee)	DG8	335	41 01.194	87 46.848
Beecher (Will)	DH8	225	41 22.659	87 32.514

(End of SOW)